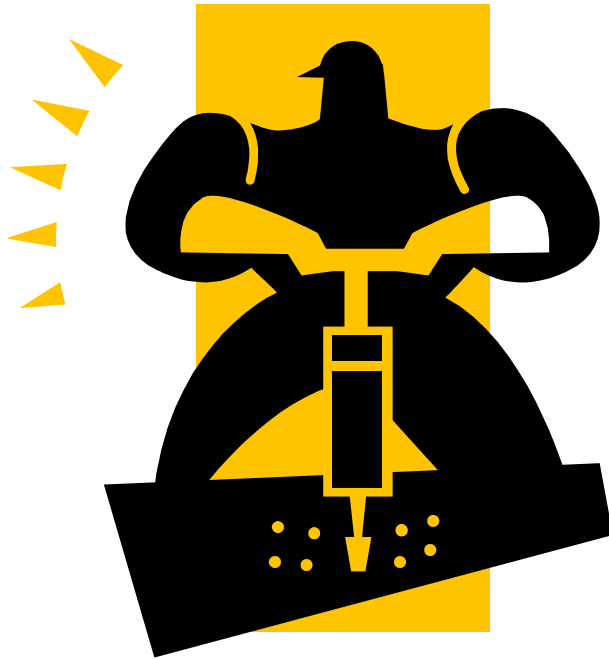


Pavement Management Program Workshop



**City of Lemon Grove
May 23, 2017**

Schedule

- Maintenance v. repair
- Pavement management program
- Paving budget
- School Lane field walk
- Group feedback



Maintenance v. Repair



CIP

- 5 yr plan
- Annually updated

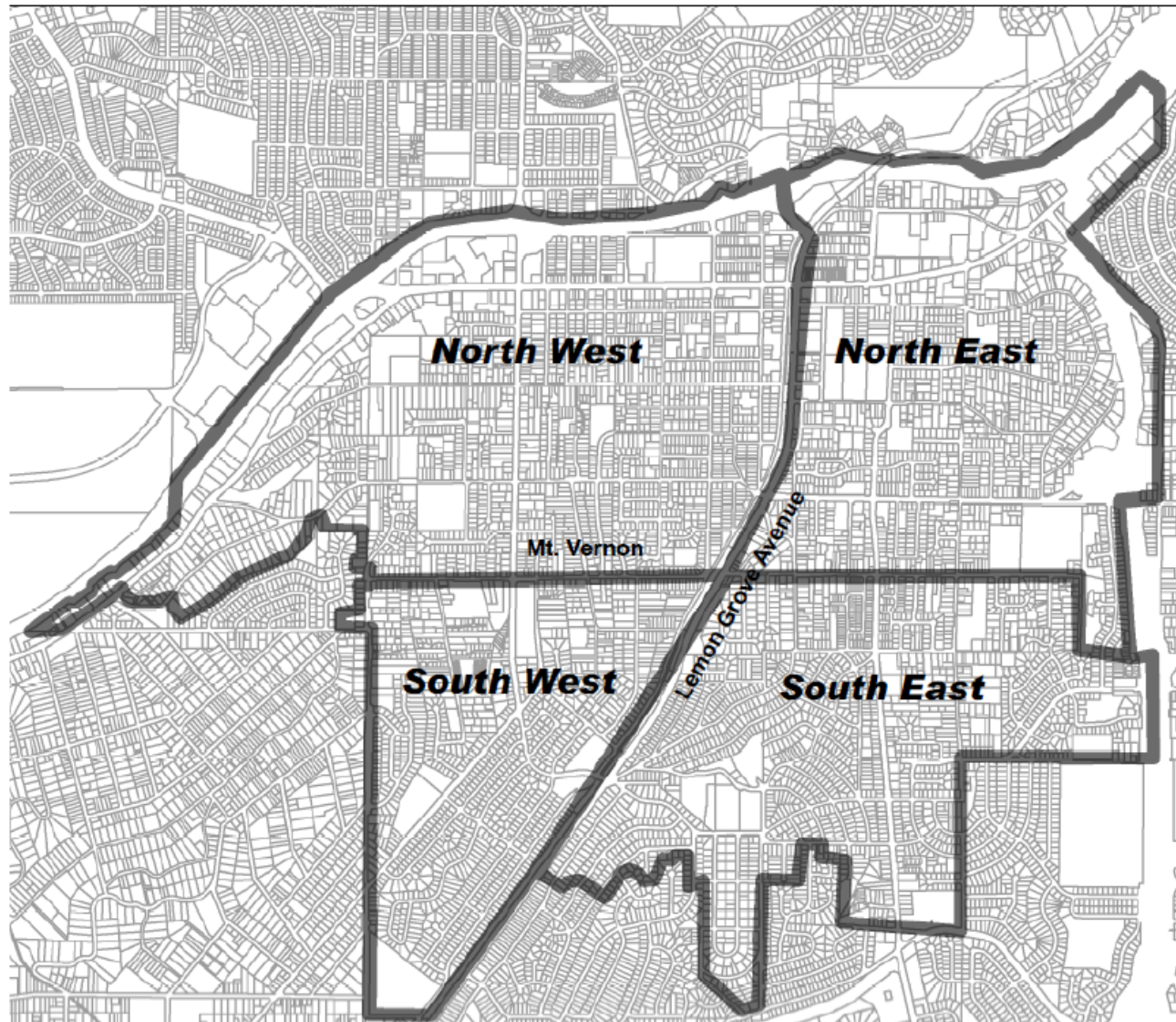
Quadrant
Maintenance

- CUPCCA
- Small projects

SR/WO

- Potholes
- Digouts

Maintenance Map



Maintenance Tools for Streets

Crack Seal



Fog Seal



Slurry Seal



Scrub Seal



Chip Seal



Cape Seal



Overlay



Overlay + Fabric



Pavement Management Program



Pavement Management Program

Benefits

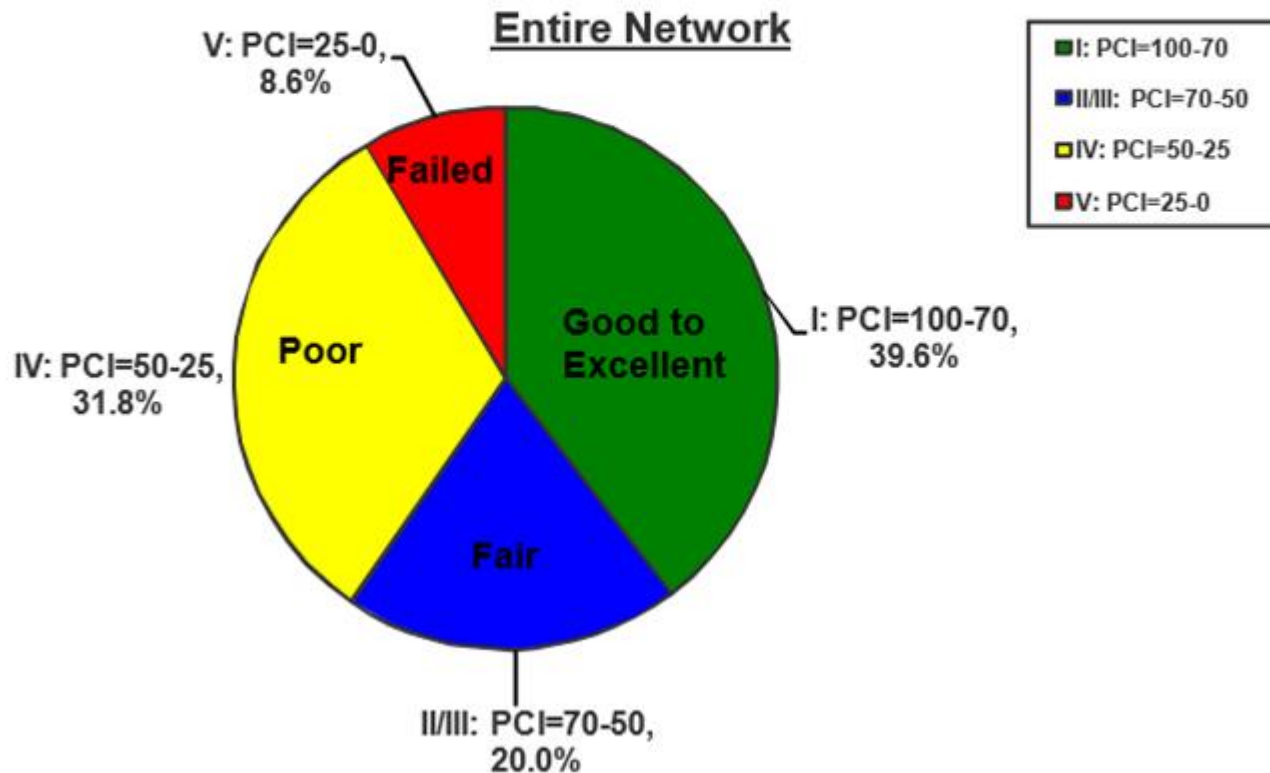
- Transparency
- Unbiased analysis of the pavement condition at one point in time
- Each street receives a quantifiable score
- Funds are systematically allocated for the best return on investment

Drawbacks

- Cannot amend without City Council approval
- Does not allow for other evaluation criteria
- Cost
- Frequency

PMP Highlights

The City of Lemon Grove maintains approximately 68.7 centerline miles of streets and an additional 12,560 square yards of parking lots. A pavement management system (PMS) is used to maintain this pavement network. Based on the results of a recent survey in early 2010, the current average pavement condition index (PCI) is 61, which is in the "fair" condition category. This existing backlog of needed repairs, if funded today, will be \$13,488,512.



PMP Highlights (cont.)

- Breakdown of street network by function class

Functional Class	Centerline Miles	Lane Miles/ Areas	# of Sections
Arterial	10.8	24.1	68
Collector	17.5	42.4	94
Residential/Local	40.4	80	310
Parking Lots (SY)	N/A	12,560	7
Total	68.7	146.5	479

PMP Highlights (cont.)

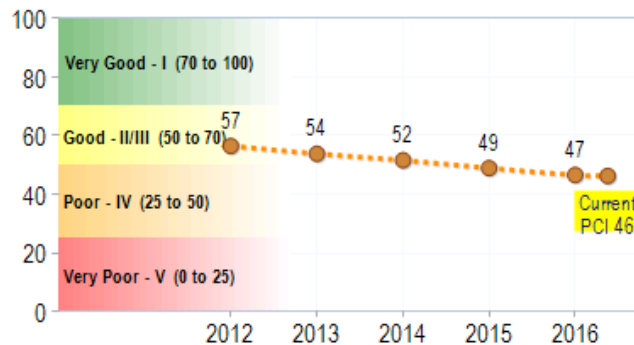
Scenario 1. Worst Case (\$315,000 per year)

This scenario assumes that the worst case scenario (i.e. no Gas Taxes are received from the State.) In this case, the annual budget is estimated to drop to \$315,000 per year. The overall pavement condition of the network will drop from 61 to 45 at the end of the analysis period. The backlog amount will increase from \$13,174,440 to total of \$36,187,958. In addition, 43.9% of the network will be in the “failed” condition category.

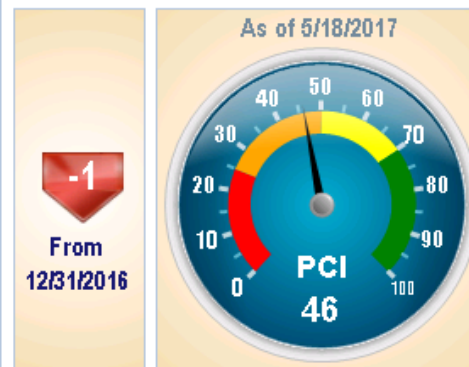
Table 5. Summary of Results for Scenario 1

Year	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Budget (\$)	314,073	313,672	314,628	314,438	313,728
Rehabilitation (\$)	54,762	51,302	53,868	52,202	52,422
Preventive Maintenance (\$)	259,311	262,370	260,759	262,236	261,307
Deferred Maintenance (\$)	13,174,440	14,092,847	14,807,856	15,516,299	21,930,417
PCI	61	59	57	55	53
Year	FY 2016	FY 2017	FY 2018	FY 2019	Total
Budget (\$)	312,861	314,728	313,205	314,593	2,825,926
Rehabilitation (\$)	51,022	55,211	55,094	57,662	483,545
Preventive Maintenance (\$)	261,839	259,517	258,111	256,931	2,342,381
Deferred Maintenance (\$)	23,524,285	30,159,549	34,481,978	36,187,958	
PCI	51	49	47	45	

Historical Pavement Condition Trends



Current PCI



Network Inventory

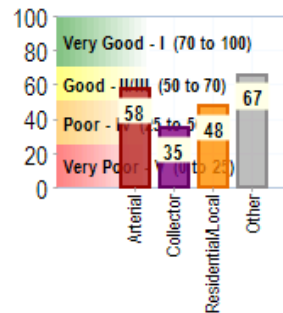
Pavement Area: **0.4**
(square miles)

Miles: **69.3**

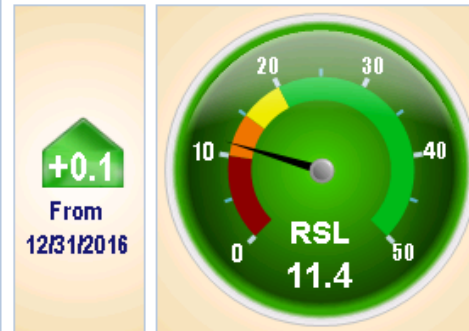
Lane Miles: **147.4**

Sections: **479**

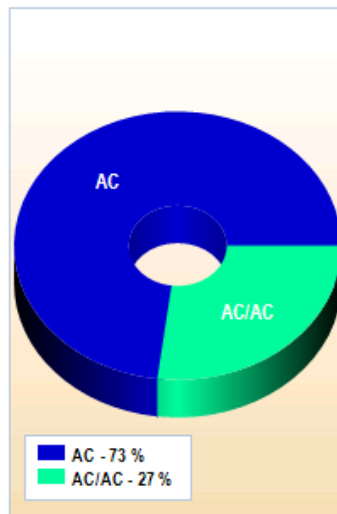
Current PCI by Function...



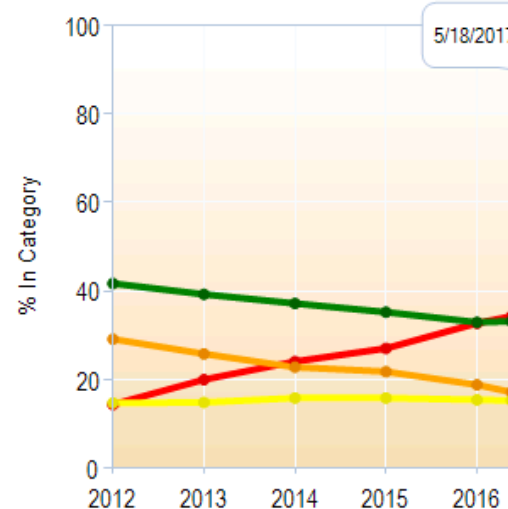
Remaining Service Life (years)



Surface Type



Historical Network Condition Trends



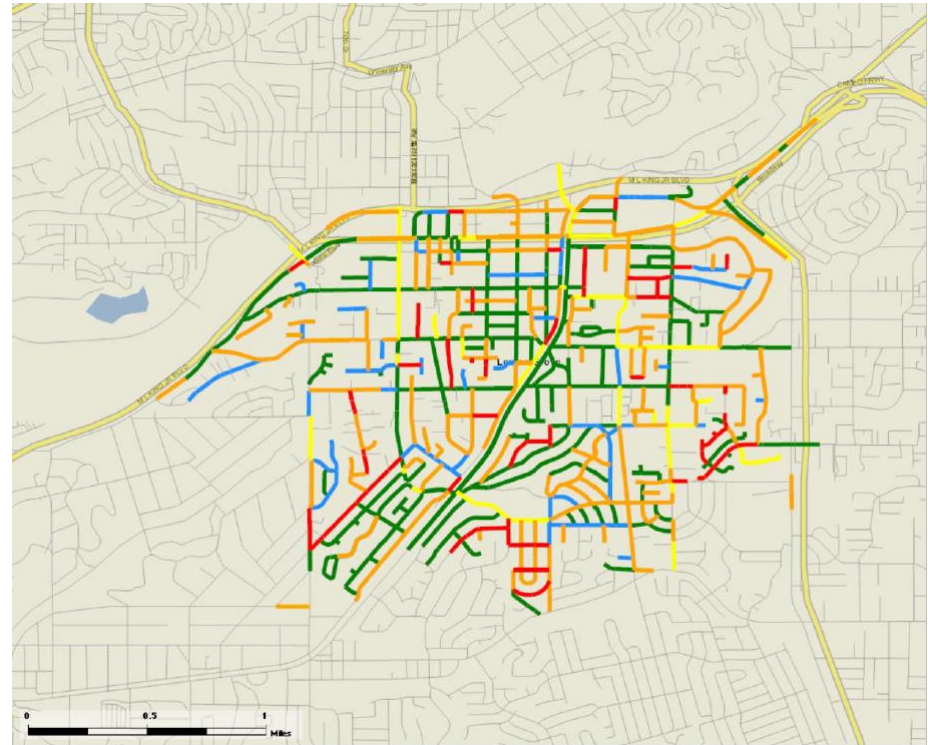
PMP Highlights (cont.)

A Tool to Answer Questions

- What does our road network consist of?
- What is the current condition?
- Which streets do we need to repair?
- When should we repair them?
- What do we need to do to repair it?
- How much money will we need?
- How can we prioritize streets for repairs?

Network Inventory

- What the city responsible for
- Basic information
 - Road locations
 - Functional class
 - Surface type
 - Construction date
 - Dimensions

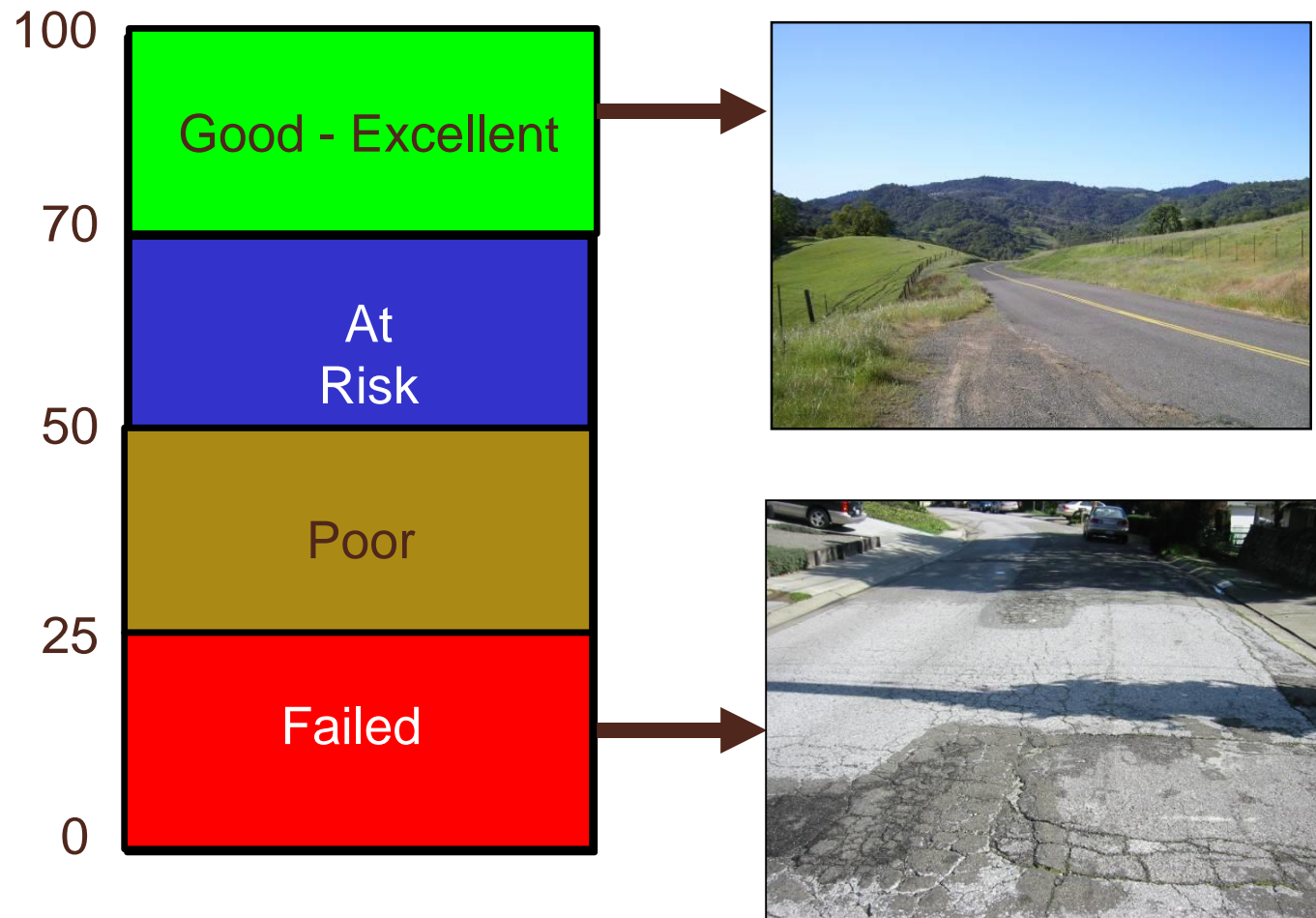


Network Condition

- What condition is it in?
- Collect distress data
- Calculate PCI



What is Pavement Condition Index?





PCI > 90

PCI = 75

MAY 12 20



PCI = 61



PCI = 40

PCI < 25



Decision Tree

Functional Class	Surface	Condition Category	Treatment Type	Treatment	Cost/Sq Yd, except Seal Cracks in LF:	Yrs Between Crack Seals	Yrs Between Surface Seals	# of Surface Seals before Overlay
Arterial	AC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00	3		
			Surface Treatment	SLURRY SEAL	\$4.05		7	
			Restoration Treatment	MILL AND THICK OVERLAY	\$24.57			2
		II - Good, Non-Load Related		PATCH AND SLURRY SEAL	\$9.00		7	
		III - Good, Load Related		AC OVERLAY (0.30FT)	\$39.30			
		IV - Poor		AC OVERLAY (0.30FT)	\$41.30			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	\$136.00			
	AC/AC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00	3		
			Surface Treatment	SLURRY SEAL	\$4.05		6	
			Restoration Treatment	MILL AND THICK OVERLAY	\$24.57			2
		II - Good, Non-Load Related		PATCH AND SLURRY SEAL	\$9.00		7	
		III - Good, Load Related		MILL AND OVERLAY(0.30 FT)	\$48.30			
		IV - Poor		MILL AND OVERLAY W/F(0.30FT)	\$50.30			
		V - Very Poor		RECONSTRUCT SURFACE (AC)	\$136.00			
	AC/PCC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00	3		
			Surface Treatment	SINGLE CHIP SEAL	\$0.74		6	
			Restoration Treatment	MILL AND THICK OVERLAY	\$7.23			2
		II - Good, Non-Load Related		DOUBLE CHIP SEAL	\$1.52			
		III - Good, Load Related		HEATER SCARIFY & OVERLAY	\$5.95			
		IV - Poor		HEATER SCARIFY & OVERLAY	\$6.14			
		V - Very Poor		RECONSTRUCT SURFACE (AC)	\$14.00			
	PCC	I - Very Good	Crack Treatment	DO NOTHING	\$0.00	99		
			Surface Treatment	DO NOTHING	\$0.00		99	
			Restoration Treatment	DO NOTHING	\$0.00			100
		II - Good, Non-Load Related		DO NOTHING	\$1.11			
		III - Good, Load Related		DO NOTHING	\$1.51			
		IV - Poor		THICK AC OVERLAY(2.5 INCHES)	\$1.92			
		V - Very Poor		RECONSTRUCT STRUCTURE (AC)	\$14.00			

Pavement Condition

Excellent

Good

Fair

Poor

Very Poor

Failed

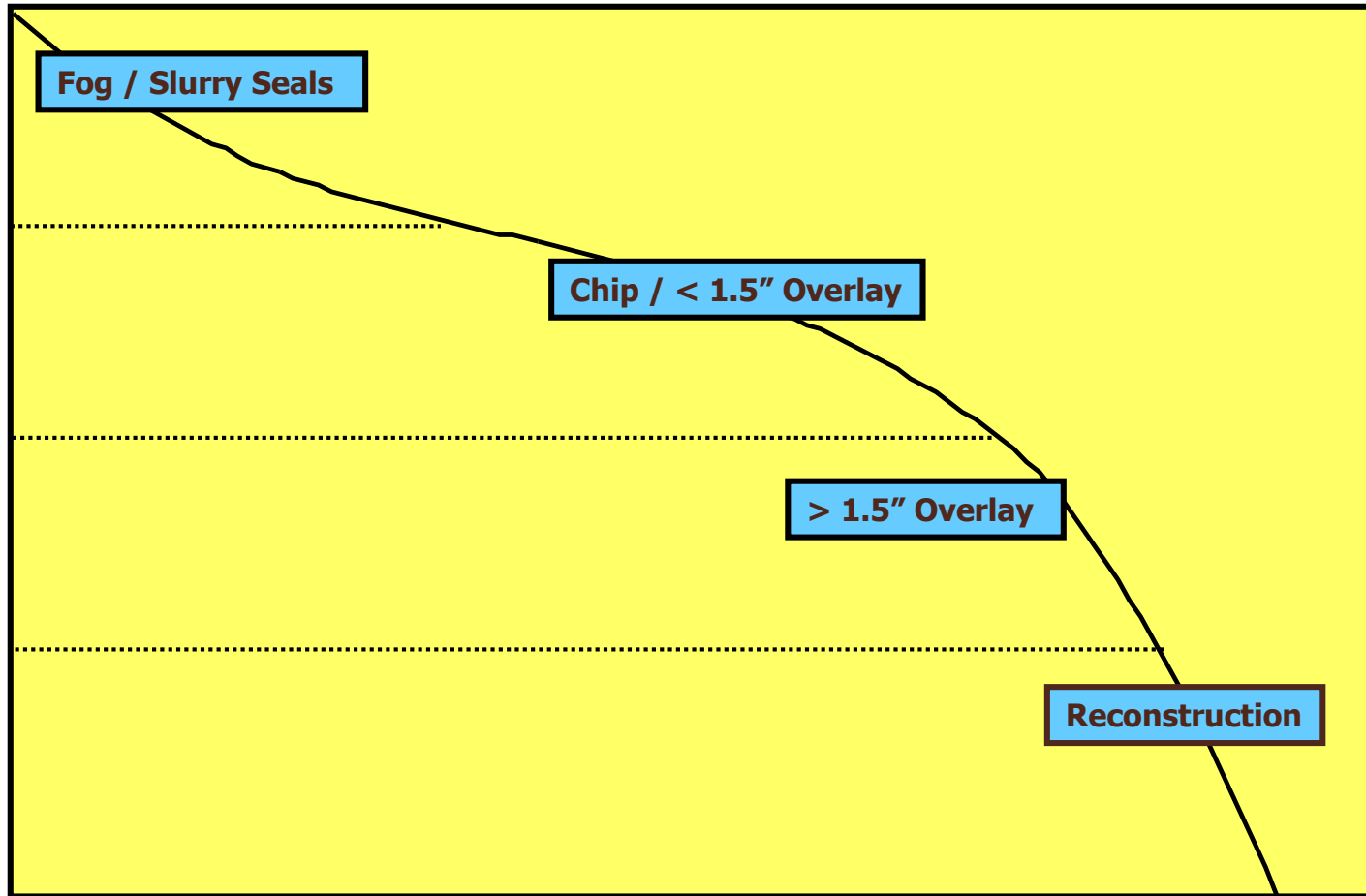
Fog / Slurry Seals

Chip / < 1.5" Overlay

> 1.5" Overlay

Reconstruction

Time



Pavement Condition

Excellent

Good

Fair

Poor

Very Poor

Failed

Fog / Slurry Seals

Chip / < 1.5" Overlay

> 1.5" Overlay

Reconstruction



Time

Pavement Condition

Excellent

Good

Fair

Poor

Very Poor

Failed

Fog / Slurry Seals

Chip / < 1.5" Overlay

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Reconstruction



Time

Pavement Condition

Excellent

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Very Poor

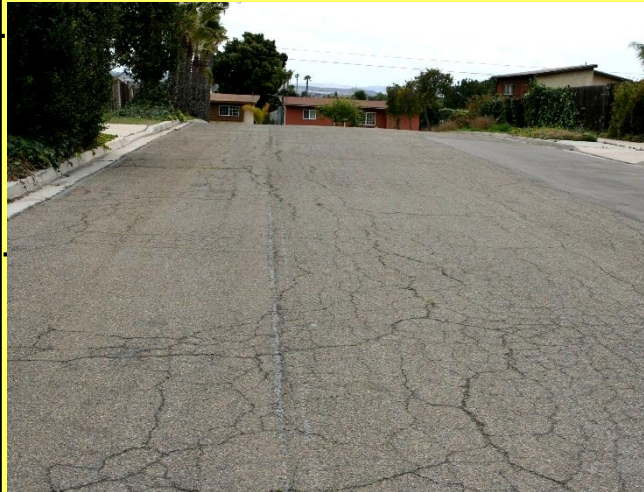
Failed

Fog / Slurry Seals

Chip / < 1.5" Overlay

> 1.5" Overlay

Reconstruction



Time

*“Pay now or pay **more** later”*

Pavement Condition

Excellent

Good

Fair

Poor

Very Poor

Failed

Fog / Slurry Seals

Chip / < 1.5" Overlay

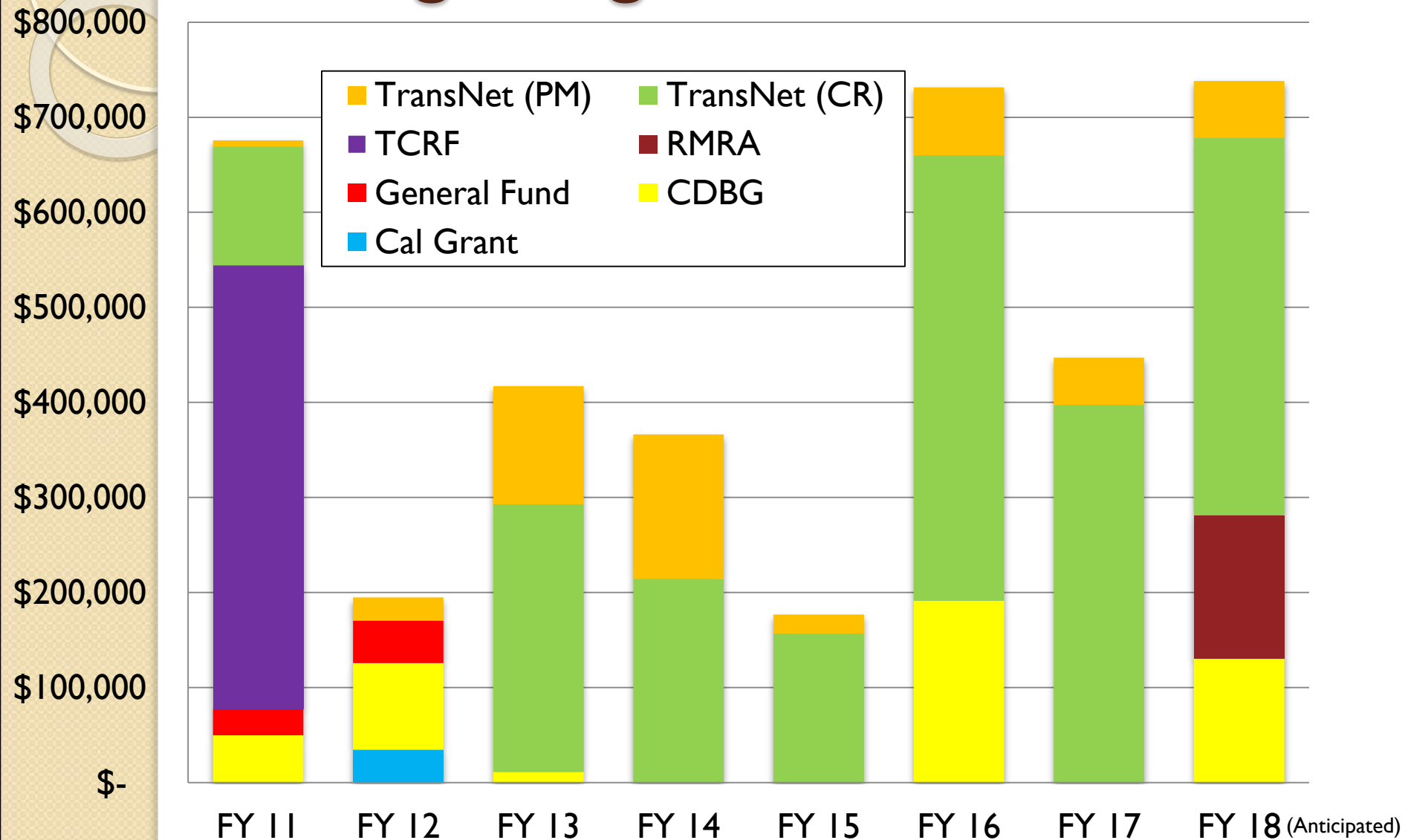
> 1.5" Overlay

Reconstruction



Time

Paving Budget



Questions?

- Maintenance v. Repair
- Pavement Management Program
- Paving budget



Take a break.
You deserve it!



School Lane Walk



Total Area:
57,113 sq ft

School Lane Walk (cont.)

<u>Treatment</u>	<u>\$/SF</u>	<u>Total \$</u>
Fog seal	\$0.12	\$6,840
Slurry seal	\$0.21	\$11,970
Chip seal	\$0.69	\$39,330
Mill + 2" Overlay	\$1.46	\$83,220
Mill + Fabric + 1" Ovrly	\$1.69	\$96,330
Mill + Fabric + 2" Ovrly	\$2.22	\$126,540
Full Depth	\$4.09	\$233,130

Feedback - Next Steps

- **Update the pavement management program**
 - Options for annual paving budget
 - Repair v. maintenance ratio
 - Continue to treat streets in house
 - Established a PCI goal for the City
- **Return to the City Council with the draft RFP for a Pavement Management Program Update**

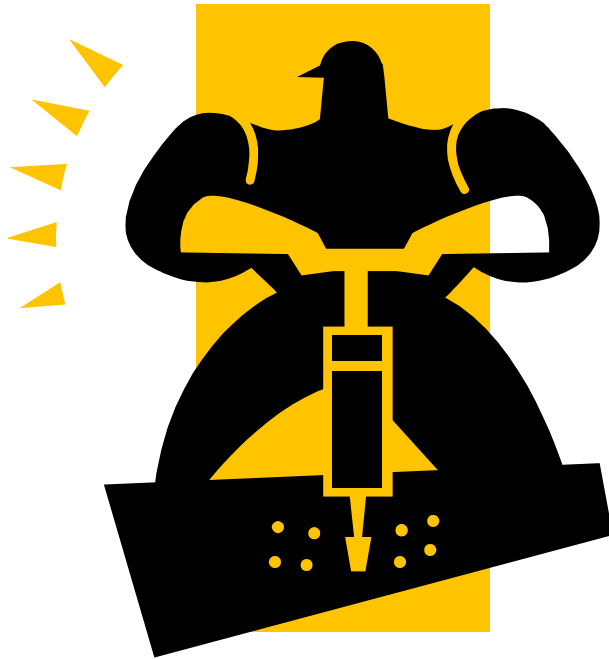


Workshop Conclusions

- Maintenance v. Repair
- Pavement Management Program
- Paving budget
- School Lane field walk
- Group feedback



Pavement Management Program Workshop



City of Lemon Grove
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